

Intriguing Young People on Website

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Type of paper: Academic Research Paper

Conference Theme: Interest, surprise and delight

Abstract

It is crucial to succeed whether the websites catch users' eye, especially for the heavy users - young people - because their first impression might be the incentive to explore more. Based on the motivation theory, the arousal emotion affected by external stimulus drives one's motivation and interests. Thus, this purpose of this paper is to figure out the properties that interest young people on website. First, the subjects are interviewed to openly choose their favorite website and describe what intrigues them most. Second, while browsing the website, some of them are questioned what their using course is, how they perceive and why they appreciate it in the way of context inquiry. Furthermore, the discourses are discussed with grounded analysis to draw a conclusion of the properties that inspire and arouse young users' interests. Besides, the framework is built for exploring cause and effect among the properties, affectional response and the young users' browsing behaviors. They are emphasized the intriguing properties by relating with HCI vocabulary and the results as the reference for web designers and following researchers.

Keywords: Websites ; Intriguing ; Young people ; Emotion ; Arousal

Introduction

It has been proved by many surveys that the number of the youth having the internet experience is fast increasing. For example, the Pew Internet & American Life said 90% of the youth aged 12-17 in America are the heavy internet users in 2004; the research of American online in 2004 for the teenagers' behavior on internet showed that 71% of them worked on the study and on-line game except for 82% for e-mail and message. Because the adolescent are usually emotionally affected by the interesting properties and issues, once the websites motivate them, the young people usually respond in the positive way and are willing to discover actively. Thus, the properties of websites which intrigue the young users are worth being explored.

The argument of this paper lies in the notion of motivation driven by arousal emotion according to Berlyne's theory. It aims to probe into the factors which influence the youth's inherent aesthetic response involving HCI and emotion issue. User experience methods, like interviewing and contextual inquiry are applied in this paper. Still, the discourses derived from experiments are qualitatively discussed with grounded analysis in terms of the user behavior, aesthetic response and the properties which arouse the youth's interests on the website.

Motivation and Arousal Emotion

Arousal is a primarily affectional response while one accepts external stimulus. Mehrabian (1974) has modeled one's three kinds of emotion pattern as APD (arousal, pleasure, dominance) theory while entering an environment ; also, arousing is viewed as one of the aesthetic dimension for human factors and design in Liu's research (Liu, 2000). The arousal drives people's motivation of active discovery as they perceive the web page similar to perceiving natural environments (Wemilius2004). If we can predict people's attitudes to particular environments, then this will help planners and designers to design environments to which people will react in a positive way (Kaplan and Kaplan, 1989).

Berlyne (1971) proposed arousal theory in experimental aesthetics field, which explained emotion in the view of motivation along with pleasure and hedonic behavior. The motivation theory has been more profoundly touched by work on the activating or energizing aspects of emotion. It has been suggested that emotions can be identified with 'secondary drives and arousal', which are motivational conditions produced by external stimuli as a result of learning (Mowrer, 1946). Berlyne proposed that the hedonic value reaches a peak when arousal potential is at a moderately high point acted by arousal-increasing devices and

arousal-moderating devices. He also proffered the determinations of arousal potential include psychophysical properties, ecological properties and collative or structural properties. Psychophysical properties are like intensity, color, and pitch, etc.; ecological properties involve inherent or learned association, conducive to survive and well-being, and collative or structural properties are such as novelty-familiarity, simplicity-complexity, clarity-obscurity and expectedness-surprisingness. The elaborate variables about Berlyne's determinations of arousal potential are listed as Table 1.

Table1 Berlyne's determinations of arousal potential

	Arousal-Increasing Devices	Arousal-Moderating Devices
Psychophysical variables	Intensity Size Saturated color	Expectation, Predictability Association Restful and soothing content Familiarity Grouping and patterning Dominance
Ecological variables	Association with conditions conducive or threatening to survival.	
Collative Variables	Novelty Complexity Conflict	

Aesthetic Response to Salience

The Categorical-Motivation model (Berlyne, 1971) was also postulated that aesthetic responses were not simple phenomena generated on an invariant level, but both diagnostic and intensive salience would be involved, with the degree of each depending upon the type of stimuli encountered. Features of high diagnostic salience should be most prototypic; those of high intensive salience should possess high arousal potential. In other words, the diagnostic salience is equated with categorical, information-rich stimulus characteristics, and the intensive salience is intensive, arousal-related stimulus characteristics. According to the prediction of the Categorical-Motivation model, internet web page design belongs to one kind of aesthetic category which is partially formed and open to future articulation. While one is accepted the stimulus like this, his arousal factors would partially account for preference, along with prototypicality. (Whitfield.2000).

For the psychologist as well as for the artists, they must be of greater interest as clues to how the objects or events in question will affect behavior in other contexts – that occupy crucial positions in psychological theory and seem closely related to pleasure (Berlyne, 1971, p.76). Thus, the intensity of pleasure and displeasure must be of interest chiefly as aids in the prediction, control, and explanation of nonverbal behavior. Also, Reward, feedback, approach and incentive value which are dedicated to positive hedonic value reflected on their further

behaviors. Figure 1 illustrates the theoretical perspective of the argument of this paper that intriguing properties induce one's arousal emotion which drives the motivation and aesthetic response toward behavior.

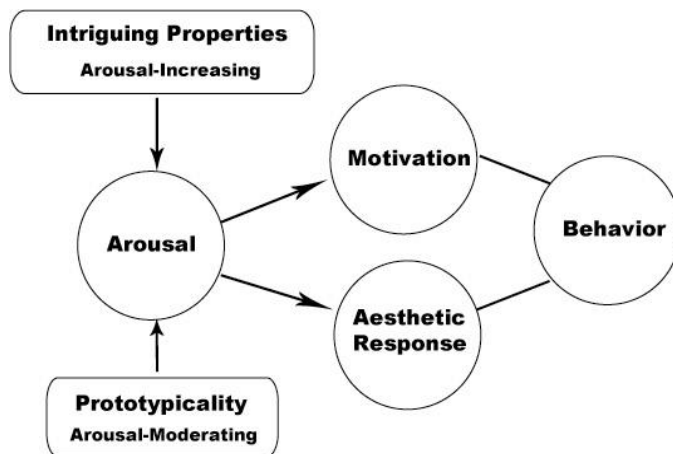


Figure 1 The theoretical perspective

Aesthetic Experience Research

In order to explore how the youth experience their favorite website and discover the factors arousing their interests, we adopted the user experience methods comprising interviewing and contextual inquiry as the following steps:

1. Interviewing

Forty freshmen in the college are asked to openly choose one of their favorite websites and describe which features intrigue them primarily. This step aims to realize what types of website the youth prefer, where they usually found websites and why they like it at first sight.

2. Contextual inquiry

Five freshmen are invited to browse the website they selected at the first step. The subjects are observed and recorded their using course; meanwhile, they are asked to think aloud how they perceive and why they appreciate it in a narrative or figurative way. The results yield the subject's adventure path and their bias on the websites.

3. Qualitative analysis for categorization

The data from interviewing and think-aloud transcripts are analyzed in the way of grounded analysis. Open coding is the first part of the analysis concerned with identifying, naming, categorizing and describing phenomena found in the text from subjects' responses. Moreover, the axial coding is the process of relating codes (categories and properties) to each other via a combination of inductive and deductive thinking. Furthermore, selective coding is the process of relating certain categories to be the core category. The codes results draw a conclusion and collect several properties that inspire and arouse young users.

The Intriguing Properties on Websites

The data from interviewing bear some findings about the intriguing properties of the websites for the youth as following analysis:

1. According to the statistic results as Table 2, the distributions of the youth's favorite website types are approximately 38% relating with the young's interests, 33% in promotion websites, 13% in corporate websites and 18% in personal websites. It shows the possibility that the youth's preference strongly depends on the personal interests and the hot issues among the commercial, public or promoting websites which are expected to draw users' attention to explore more. However, in this case, the community websites such as discussion or blog websites are excluded because they are visited mainly for the personal habitual tendency but not for external attractions.

Table 2 the website types which the youth's interest

Website Type	Percentage
Promotion	33%
Corporate	13%
Interest	38%
Personal	18%
Total	100%

2. The answers to the question, "how do you find your favorite website", yield which means most easily persuades the young to visit. They are almost the same proportion among related link on the website (32%), classmates or friends' recommendation (30%), and searching from the entry websites (30%). However, the advertisement link and banner is notably less than 8%. It illustrates the advertisement on website possibly brings the interruption beyond curiosity for young people.

Table 3 the means which most easily induce the youth to visit

AD	8%
Related Links	32%
Recommendation	30%
Entry Websites	30%
Total	100%

3. The subjects' transcripts about their preference are coded for categories as Table 4. Open coding is the part of the analysis concerned with identifying, naming, categorizing and describing phenomena found in the text from what subjects' appreciation. Each line,

sentence or paragraph etc. is read in search of the answer to the repeated question "why does it intrigue you? What is your best appreciation? Then the axial coding is the process of relating similar codes to each other via a combination of inductive and deductive thinking.

Table 4 Coding for the intriguing properties on website

Axial coding for category	Open Coding
Perception Intensity	Lively Character or Mascot Graphics Illustration Saturated Color Music
Variability	Animation Dynamic visual design Interactive effects of the interface Variety
Atmosphere	Simulating Familiar Scenario, Tec. Nostalgic , Game
Dominance	Interactivity for readability Easy Distinction Free but don't lost Fast, don't wait Interface Guild Constant interface
Service	Meet with users' need Functional ,Useful Content Instant update news Sharing Interactive Explainer, Interactive Demonstration Game Customized

Based on coding for relating categories, the properties on website intrigue the youth are explained as five core categories: **Perception Intensity, Variability, Atmosphere, Dominance, and Service**. They are explained as below summaries:

Perception Intensity: The attention primarily depended on the visual and audio factors, such as high-saturated color, the delicate graphic and illustration, and the lively mascot and the volume and rhythm of sounds.

Variability: The techniques of Flash and action script are applied to create the dynamic effects and random variety which provide more unexpectedness and surprise. It just meets the youth's preference of interacting with the website for fun.






Atmosphere: The atmosphere of the website which is associated with their living and surroundings impressed the youth.

Dominance: Usability, such as the easy-understood content, navigation guide, accessibility, readability usually decides their positive evaluation. Besides, the youth prefer to easy and not complicated operation steps because it brings them a sense of fulfillment and pleasure.

Service: For emotional and rational sakes, the youth's preference possesses both personalized and social features. They enjoy accessing personal account to customized service for their privacy; they also like the website which offers the service such as message board, files download, experience sharing, etc. to keep the relationship with friends or society group on the website.

Browsing Paths and Behaviors

Proceeding with the think-aloud protocol inquiry in the using context, five subjects' browsing paths and behaviors on the website they selected are observed and recorded; meanwhile, they are inquired questions and asked to think aloud about their behavior, their feel and what they focus on the websites. The following summaries are the subjects' transcripts.

Subject1	<i>At the beginning, I feel beautiful and comfortable about the website's atmosphere because its animation and illustrations on the homepage visually attract me a lot. I follow the dynamic variety to discover the new happens, try the buttons and then use the offered services, such as chatting room, downloads stuffs.</i>	 http://www.kokoro.com.tw/
Subject2	<i>It seems I enter one café shop where provides good mood and coffee sharing; the below five can-like buttons seems to represent different persons' insight from the bottom of heart and fee. They induce my curiosity to push them. Then, I am willing to leave my message and share my feel to others.</i>	 http://www.coffeeting.com/
Subject3	<i>Playing with the opening animation and game offers me the initial familiarity with the website. After entering the website, the animated effect leads me to push them, but the crowded colors and game dizzy me in the short time.</i>	 http://www.mabinogi.com.tw/
Subject4	<i>First, I keep my eye on the strikingly graphics, and then freely move the mouse on the screen for a while. In order to distinguish between graphics and the main items, I expected the button icon affordance and hint to guide me the path to deep explore; and then I began to read the lines of texts.</i>	 http://www.lecafe.com.tw
Subject5	<i>Push button on homepage, overall browse the message on the website. I like it simple, powerful layout, clear recognized icons, no dead link. Actively and vivid interface leads me play with its interactive effects.</i>	 http://www.dominos.com.tw/index.asp

It is inferred the youth's browsing pattern on their best-liked website according to their transcripts. First, they are aroused or inspired by the atmosphere and first impression and pay attention to the visual attraction. Next, they decided to explore deeply and freely browse along with the dynamic variety leading them to interact or paly with interface effects. Then, they try to push the recognized buttons and engaged in discovering the content and service of the website. Figure 2 presents the sequence of the browsing pattern.

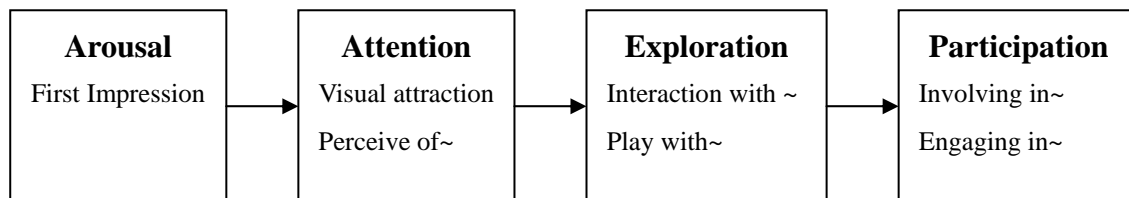


Figure2 the pattern of the youth's browsing the interesting website

Aesthetic Response

To figure out the youth's experience and affection while they are undergoing their preferred website, the coding process is applied again to interpret their protocol discourse to core categories which is just similar to Berlyne's collative properties and aesthetic experience comprising of engagement and pleasure (as Table 5). Still, some findings result from the process of the axial and open coding:

- The emotion pair are almost in accord with the collative variables derived from Berlyne's arousal theory as certain opposite emotion pair, such as "Arousal and Relaxed", "Familiar and Mystery", "Complexity and Simple", "Spiritual and Temporal"
- Involvement and engagement just meet the notion of aesthetic experience defined by Flow theory.
- In addition to the collative variables of Berlyne's arousal theory, "Spiritual or Temporal" depended on the individuals' background and experience influences their responses to the website as well.
- Unexpectation and Playfulness are the main factors to engage the young people's involvement in the website; moreover, instant feedback and entertainment are the key points to amuse them.

Table 5 Coding for the aesthetic responses

Core category	Axial coding	Open Coding			
Collative Properties	Excited	Shock Impulse Attraction	Excited Unexpected Impressed	Shock Amazing Surprise	
	Relaxed	Relaxed Easy Airily Changing	Calm Lively Sporty Fluent	Comfortable Vivid Bright	
	Spiritual	Friendship Soft Atmospheric Sharing	Attentive Listening Touch Spiritual	Emotional Scenario based	
	Temporal	Funny Comical	Cool Fun	Funny Game	Cure Humor
	Complexity	Visual Crowded Dizzy	Decorated High Quality	Visual detailed Truly	
	Simple	Simple	Compact	Tech.	
	Familiar	Familiar Involving exotic situation	Traditional Feature	Nostalgic	
	Mystery	Fresh Mystery Unique	Stylish Expecting Curious	Fashion Worship Novel	
Aesthetic Experience	Flow	Engaged	Involvement		
	Pleasure	Pleasure Appreciation	Aesthetics Satisfied	Happy	

Discussion and Conclusion

To explore cause and effect among the properties, aesthetic response and the young users' browsing behaviors, the framework (as Table 7) is concluded by integrating the analysis results from interviewing and context inquiry. The four main steps on the first row pattern the browsing path; the length of line represents the comparative duration the steps. The categories with outline box are viewed as the properties interesting to the youth people; and the positions symbolize the happening occasion during the browse.

The young people's first aesthetic response to the prototypicality of the websites depends on the website type, visual style, overall atmosphere and apparent complexity. It is the initial

impression arousing the youth's preference. Then, the moderate features of color, graphic, information and music reach one's arousal to a high point and induce their further attention. While the young tentatively explore the website, the changeable and unexpected features, such as interactivity effected by animation or dynamic interface bring them fun and interests as an adventure does. Still, the interaction pattern determines the difficulty, complexity, and the length of the venture. After experiencing deep exploration and discovery of the website, the youth are getting to realize whether they afford it or not. It is the critical reason of their disgust or like resolves to approach or avoidance. However, poor usability, like slow feedback, lost in the website, etc. will usually decrease their will to participate. Furthermore, service is important to satisfy with the youth's need in certain extent. Sharing services keep the connection in the aspects of communication and spiritual; challengeable games keep users' durable preference and impression; and the customized services make them feel esteem and fulfillment. Collative properties are derived from perception and cognition comparing with before experience. They are generally corresponded to the stimulus on the website and bear the contrast preference tendency. The full engagement and pleasure result the young users' aesthetic experiences on the website along with the progress of browsing behavior.

Table 6 The framework among intriguing properties, aesthetic response and browsing behavior

Arousal	Attention	Exploration	Participation
<u>Prototypicality</u> Category, Content Style, Atmosphere			
<u>Perception Intensity</u> Color(Saturation, Brightness) Graphic(Size, Number, Elaboration, Abstraction) Information (the numbers of link node, text areas, the number of frames) Music(volume, rhythm)			
<u>Variability</u> Interaction effects interaction behavior interaction pattern			
<u>Dominance</u> Speed Interface Guide Control			
<u>Service</u> Sharing Game Customized			
<u>Collative properties</u> Excited or Relaxed Spiritual or Temporal Complexity or Simple Familiar or Mystery <u>Aesthetic experience</u> Flow Pleasure			

This paper is an exploration of the connection between affection and users' behaviors on the perspective of the motivation theory, which support the arousal emotion as the inherent drives to action. Therefore, the conclusion indicates the properties as the factors intriguing the young website users and the framework implicates the cause and effect among the properties, aesthetic response, and users' behaviors on website. Having acknowledged the limitations of the qualitative data from interview and observation, we realize the findings of such research

might be not conclusive and strongly verified by objective experimental results. Hence, there are several experimental studies that could be undertaken in future research to verify among the properties or the website categories.

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